

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application:

1. (Previously Presented) A self-noise cancellation mechanism for reducing performance degradation as a result of self-generated noise, comprising:

a pulse-forming network for producing an internally-generated ultrawide bandwidth (UWB) bi-phase signal having a first arranged pattern;

a mixer for combining the UWB bi-phase signal with an incoming RF UWB signal having a second set pattern; and

an integrator for accumulating an output of the mixer,

wherein the first arranged pattern comprises a first set of bi-phase wavelets and an adjacent second set of bi-phase wavelets,

wherein the second arranged pattern comprises a third set of bi-phase wavelets and an adjacent fourth set of bi-phase wavelets,

wherein the first set of bi-phase wavelets and the third set of bi-phase wavelets are the same in wave shape and polarity, and

wherein the second set of bi-phase wavelets and the fourth set of bi-phase wavelets are the same in wave shape, but are inverted in polarity.

2. (Original) A self-noise cancellation mechanism as recited in claim 1, wherein the first and third sets of bi-phase wavelets each comprise two wavelets.

3. (Previously Presented) A self-noise cancellation mechanism as recited in claim 1, wherein the second and third sets of bi-phase wavelets each comprise two wavelets.

4. (Original) A self-noise cancellation mechanism as recited in claim 1, wherein the first, second, third, and fourth sets of bi-phase wavelets all have equal number of wavelets.

5. (Original) A self-noise cancellation mechanism as recited in claim 1, further comprising an antenna for receiving the incoming RF UWB signal.

6. (Original) A self-noise cancellation mechanism as recited in claim 5, further comprising a front end circuit located between the antenna and the mixer for processing the incoming RF UWB signal.

7. (Original) A self-noise cancellation mechanism as recited in claim 6, wherein the front end circuit includes one of a low noise amplifier, an automatic gain control circuit, and a stub circuit.

8. (Original) A self-noise cancellation mechanism as recited in claim 1, further comprising an analog-to-digital converter for converting the output of the integrator into a digital signal.

9. (Previously Presented) A self-noise cancellation mechanism in a radio receiver,
comprising:

means for producing an internally-generated ultrawide bandwidth (UWB) bi-phase signal
having a first arranged pattern;

means for receiving an incoming RF signal having a second arranged pattern;

means for combining the internally-generated UWB bi-phase signal and the incoming RF
signal to produce an output; and

means for integrating the output of the combining means over a length of time that
corresponds with the first and second arranged patterns such that an integration output
approaches zero when the incoming RF signal is aligned in phase with the internally-generated
UWB bi-phase signal,

wherein a first portion of the first arranged pattern is substantially the same in shape and
is the same in polarity with respect to a third portion of the second arranged pattern, and

wherein a second portion of the first arranged pattern is substantially the same in shape
and inverted in polarity with respect to a fourth portion of the second arranged pattern.

10-24. (Cancelled)